

Little research in sex chromosomal aneuploidies appears to have been done in the 1980s. Perhaps the appeal of sociobiology as a means to explain every aspect of human biology and behaviour has maintained the *status quo* in this area of research. Alternately, it may simply reflect the relatively mild effects on the individual exhibiting these abnormal karyotypes, in which case further research may be a low priority. The effects of autosomal aberrations such as Trisomy 21 (Down's Syndrome), or Trisomy 18 appear to be much more profound, and may merit more in the way of research funding, even though the incidences of these chromosomal aberrations may occur at similar frequencies as some of the sex chromosomal aneuploidies.

Although physical abnormalities can occur in individuals with sex chromosomal aneuploidies, they are seldom life-threatening. The exaggerated focus on the perceived psychological and behavioural traits of individuals with these abnormalities may reflect the sociobiological trends of the past decade. Biological determinism does a disservice to those individuals exhibiting sex chromosomal abnormalities. The genotype of the individual with a sex chromosomal aneuploidy does not necessarily result in a predetermined phenotype. Further research is warranted to determine the etiologic factors responsible for the anomalies. An emphasis on psychosocial aspects only hinders this process, and can result in a distortion of the facts.

THE SOCIOBIOLOGY OF RAPE:
A Critique

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ABSTRACT

In the last chapter of his book, *Sociobiology: The New Synthesis* (1975), E.O. Wilson suggested that adaptive behaviours found in animals could be applied to humans. Wilson's work provided the impetus for a great deal of behavioural research which was to be carried out on a number of topics, including rape. The purpose of this paper is to look

critically at the sociobiological theory of rape. This will be accomplished by first outlining the theories of Shields and Shields (1983), and Thornhill and Thornhill (1983). Second, the animal data that is utilized by sociobiologists will be critically examined. Finally, the theories of Shields and Shields and Thornhill and Thornhill will be examined critically.

RÉSUMÉ

Dans le dernier chapitre du livre *Sociobiology: The New Synthesis* (1975), E.O. Wilson suggère que les traits adaptifs trouvés chez les animaux peuvent s'appliquer aux humains. Le travail de Wilson a fourni l'impétus d'une grande quantité de recherche sur le comportement qui a inclus plusieurs sujets, dont le viol. Cet article examine et critique la théorie sociobiologique du viol. L'auteur procède d'abord par décrire les théories de Shields et Shields (1983) et Thornhill et Thornhill (1983). Ensuite, des données se rapportant aux animaux, utilisées par des sociobiologistes, sont examinées. Finalement, les théories citées ci-dessus sont évaluées et critiquées.

SOCIOBIOLOGICAL THEORIES ON RAPE

One of the first scientists to suggest that rape was a behavioural adaptation in humans was a student of Freud, Helene Deutsch, in 1944. It was her belief that when human females "lost estrus" and became sexually receptive at all times, there was a drastic change in human sexuality. Deutsch felt that the loss of estrus meant that the female had "subordinated herself to the sexual will and domination of the male" (Deutsch 1944:227). The female was no longer able to control sexual activity, since there were no longer visual or olfactory signals to show estrus. For Deutsch, this meant that "the male could free himself from his dependence upon the feminine rhythm and take sexual possession of the female even without her consent" (ibid:228). Deutsch later went on to say that she clearly felt that men had evolved to be rapists (Deutsch 1944).

In his 1975 book, *Sociobiology: The New Synthesis*, E. O. Wilson defined sociobiology as "the systematic study of the biological bases of all social behaviour" (Wilson 1975:4). He went on to state that the purpose of sociobiology was "to develop general laws of the evolution and biology of social behaviour, which might then be extended in a disinterested manner to the study of human beings" (Wilson in Barash 1977:xiv). Wilson's review of the lengthy material on the evolution of behaviour in animals and insects allowed some animal researchers to find a suitable explanation

for animal rape: it could be explained biologically, through the action of natural selection. Many researchers suggested that, perhaps, rape would gain the male some type of evolutionary advantage: for instance, Parker stated that rape may allow the male to increase his fitness if the female can be overpowered, and if the ovum can be fertilized (Parker 1974). The first attempts to link the sociobiological theory of rape in animals to rape in humans were made in 1983 (Shields and Shields, Thornhill and Thornhill). A brief outline of both theories follows.

Shields and Shields (1983) base their argument on three types of mating strategies that males -- humans, as well as all other animals -- are alleged to possess. The first strategy is "honest courtship". A male is "honest" if he possesses "high quality genes, resources, or both, and if he honestly intends to provide the parental investment necessary to maximize the quality of his offspring" (Shields and Shields 1983:118). If the female is made aware of his qualities during courtship, then the male will become a desirable mate and father. The result will be a fully co-operative pair-bond. The second strategy is what Shields and Shields call "deceitful or manipulative courtship". This occurs when "a low quality male signals a willingness or capability to provide necessary parental investment" (ibid). If the female is deceived into believing that the male is 'honest', then she will copulate with him, believing that he will support her and her offspring. Once the male is assured that the female can raise "at least some" offspring, the deceitful/manipulative male will abandon the female in search of new females with whom to spread his genes. These two strategies are only successful if the male is able to attract a mate, through a display of resources (or potential resources, in the case of the deceitful/manipulative strategist).

If a male is unable to accomplish this, he will have to resort to the third type of mating strategy; forcible rape.

If any female discriminates against any male while the male is morphologically and physiologically capable of forcing copulation with little or no risk to itself, and if the act has even a small probability of successful fertilization, then selection may favour a forcible rape tactic (Shields and Shields 1983:118).

Shields and Shields state that this type of strategy is disadvantageous for the female, yet she will eventually "submit" because there may be a higher cost to her fitness (i.e., serious injury or death) than would be encountered if fertilization occurred. In the long run, the female will lose fitness, since she will have to raise the offspring herself, without the aid of a mate. She

will also be raising offspring that are not as advantageous to her as would be offspring of an honest or deceitful/manipulative male.

Shields and Shields go on to state that, while rape may be adaptive, it does not imply that all males will rape exclusively, or all the time. The type of strategy chosen by a male for any mating event will depend on the potential benefits vs. the potential costs. The evolutionary payoff for an 'honest' male will be the most favourable whereas the payoff for the rapist will yield the least return. This is apparently because, in honest courtship, "the resulting pair bonds and cooperative investment will insure an optimal parental environment and high quality progeny" (Shields and Shields 1983:119). However, even though the rapist's payoff is relatively low, it is the only way he can increase his fitness. The potential cost for the rapist is much higher than the one for the 'honest', or even 'deceitful', male. In the human case, the rapist runs the risk of being physically injured by the female, the female's family, or being imprisoned. All of these factors would significantly increase the risks and costs of raping and, therefore, cut the man's fitness. However, Shields and Shields also point out that, if the benefits of rape outweigh the costs, "then rape would be an adaptive, and therefore an evolutionarily [sic] expected, tactic" (ibid:120). From this, Shields and Shields suggest that "all men are potential rapists", depending upon the individual condition that each male faces (ibid).

Shields and Shields distinguish between the proximate causes of rape and the ultimate causes:

Ultimately men may rape because it increases their biological fitness and thus rape may serve a reproductive function, but in an immediate proximate sense, it is as likely that they rape because they are angry or hostile" (ibid:122).

The authors support this by arguing that the "biological consequence of [rape] is possible fertilization" (ibid).

Thornhill and Thornhill's argument is similar to Shields and Shields', yet goes further to postulate a social context for rapists. They begin by defining rape as the "forced copulation of a female by a male" (Thornhill and Thornhill 1983:140), and go on to suggest males most likely to rape "are the big losers: those men who are excluded from a share in the wealth, prestige, and resources, and thus access to desirable mates" (ibid:141). The authors further state that human males with the greatest difficulty climbing the social ladder are most likely to rape. For these males, it is the only way to maximize their fitness and pass on their genes. Thornhill and Thornhill conclude that rapists tend to be "most monogamous males

in industrial, and all monogamous males in preindustrial societies"; young, poorly educated males with lower socioeconomic status, and less ability to raise families than older, more affluent men (*ibid*).

Rape is depicted as a reproductive strategy. By looking at police reports to determine the age of rape victims and data on fertility and reproductive value, Thornhill and Thornhill conclude that "men will not rape uniformly across the distribution of female age categories, but instead they will focus on females near peak fertility" (*ibid*). They support this assumption with the statement that the age distribution of rape victims differs markedly from that for other violent crimes, such as murder. The authors further state that males will most likely rape when the competition for females is the most intense; that is, at the ages prior to usual first marriage. To support this claim, they point to a relationship between the ages of rapists and the general marriage age of men in the population. Further, rape is clearly a sexual act. The authors refer to data that states that 83.4% of all sexual assaults result in penile-vaginal intercourse, with a "very conservative" estimate that 50% of rapes include ejaculation into the vagina. They conclude from this that "the rapist behaves as if he is sexually motivated; indeed as if he is trying to reproduce" (Thornhill and Thornhill 1983:163). Occasionally rape does result in pregnancy, and Thornhill and Thornhill state that this is evidence that men who rape have a higher fitness than if they did not force women to copulate (*ibid*).

Both theories share two common features. First, the basic premise underlying each hypothesis is that males who rape produce more offspring than they would have, had they not raped. Second, they both infer from this that the fitness of the male rapist increases, while that of the female decreases (i.e., possible physical injury or pregnancy).

ANIMAL DATA ON RAPE

It is important to note that both hypotheses about the biological basis for rape rely heavily on animal research. This approach, fundamental to sociobiological theory, argues that, in humans and in animals, decision-making processes that result in a biologically adaptive conclusion are selected for, not specific behaviours. The effect of selection, therefore, has been to regulate the cognitive processes and emotional reactions in biologically adaptive ways. The particular biological response that is employed will depend upon the environmental circumstances that the organism is in. Sociobiological theorists interested in a specifically human behaviour (rape, for example) will look for similar behaviour in non-

human species. The researchers will attempt to discover under what conditions these behaviours occur in the animal world; if these circumstances are considered comparable to the human context, then the behaviour is labelled as 'adaptive'. This approach is evident in the hypotheses about rape of Shields and Shields (1983) and of Thornhill and Thornhill (1983).

There are, however, problems with application and extrapolation of animal research on rape to humans. Perhaps most problematic is the definition of rape in a non-human context.

The legal definition of rape varies, moreover, in human groups. One Western definition explains it as

an act of sexual intercourse with a female, not one's wife, against her will and consent, whether her will is overcome by force or fear of force (Brownmiller 1975:368).

Unfortunately, this definition is limited only to penile-vaginal intercourse, and sees only males as perpetrators, and only females as victims. Definitions of rape differ cross-culturally (Sandy 1981), prompting Harding (1985) to propose that "rape be defined as a sexual act forced on an individual against its will".

Other problems with the animal data on rape are evident. In 1975, when Susan Brownmiller wrote *Against our Will*, she stated that, to the best of her knowledge, no zoologist had claimed to observe rape among animals in their natural habitat. In essence, Brownmiller challenged the sociobiologists to find instances of rape among animal species. It was not until sociobiologists searched the literature for instances of animal behaviour which could be possible construed as rape that they attempted to explain certain aggressive sexual behaviour as rape (Harding 1985:24). Clearly, rape was anthropomorphized; sociobiologists assumed that non-human behaviours which looked like rape, were rape (Sunday 1985:5). An oft-cited example of 'rape' among animals is the case of the elephant seal. Here, the larger male often forces his sexual attention on the smaller female by using his large mass to pin the female and prevent escape (Cox and LeBoeuf 1977). However this, and other purported instances of animal rape, imply "that the scientists understand the motivation and the sexual preferences of the animal they are describing as the rape victim" (Harding 1985:27). Resistance in human females is regarded as an indicator of rape, but in some species this may be a normal part of female sexual behaviour. If one returns to the study of elephant seals by Cox and LeBoeuf (1977), one could argue that, in fact, the female is practising a

strategy to test and compare males. Neither male nor female seals show any sign of courtship or solicitation prior to mounting. On average, the females will resist up to 79% of all mounts attempted until the male dismounts (*ibid*). In resisting a male's attempt at mounting, the female encourages other males to attempt to mount. As the number of males that mount increases, so does their rank. Eventually, the most dominant male mounts the female. Since he is the largest male, no other males would attempt to dismount him. The result is that, by resisting, the female is able to successfully mate with the most dominant male in the group (Harding 1985). What one scientist sees as rape, another sees as a female strategy to induce male competition. Another important fact to consider is that the female has potentially mated with a number of males, and there is no guarantee that the most dominant will actually fertilize the ovum.

Another well-cited example of purported rape occurs among orangutans. Here, the males who 'rape' usually attack older females, with whom they would not normally mate (MacKinnon 1978). In addition, the attacks usually occur when the female is out of estrus. During periods of estrus, it was found that the sexual encounters did not involve force. MacKinnon (1978) states that the rate of pregnancy is very low after a rape, compared to pregnancy rates when the female initiates sexual activity. This is due, in part, to a suggestion that males can only achieve intromission if the females show some degree of cooperation. Thus, MacKinnon (*ibid*) suggests that rape in orangutans may serve a social, rather than reproductive, function. If the female is encouraging the male, this nullifies the "against its will" phrase of Harding's 1985 definition of rape.

Rather than drawing parallels between humans and animals, some sociobiologists redefine rape in specialized ways to suit their particular problem (Harding 1985), often de-emphasizing or ignoring the element of female resistance. An example of this type of specialized definition can be found in Keenleyside's 1972 study of the Northern Longear sunfish. Prior to mating season, sunfish males build nests on the ocean floor, usually closely grouped together. Each male defends his territory by swimming the perimeter of his nest. After the nests are complete, females enter the males' territory to spawn, pick a male, and the two then circle the nest. At some point during the spawning, other males may attempt to enter the nest at the same time as the female releases her eggs. The original male usually chases the intruders away, only to see them return seconds later. Although Keenleyside presents no conclusive evidence, the intruder "appears" to release sperm and fertilize the eggs himself (*ibid*). In this case, there has been no contact between the 'rapist' and the

'victim', nor any indication of resistance on the female's part. It is interesting to note that Keenleyside did not describe this behaviour as rape, in the original study, yet Shields and Shields (1983) decided that this behaviour could be considered as evidence for the occurrence of rape in fish.

Another example of an altered definition of rape can be found in avian experiments employing a dead female model to test the males' tendencies to rape (Butler 1984). The dead bird was presented in a horizontal posture which resembled the normal female copulation solicitation position. The researchers counted the number of times that males attempted to mount, and came up with a measure of the tendency of males to rape (ibid). It is very difficult to call this kind of behaviour rape, since there is no way that the female could resist (an essential element of rape), and the bird was placed in a position known to solicit mounting. These types of experiments question not only methodology, but ethical concerns as well.

An additional example of the manipulation of definitions can be found in Barash's study of mallard ducks. Barash (1977) stated that rape occurred when there was a lack of normal courtship behaviour by either the male or the female. Even if the female does not resist, rape is considered to have occurred, since the normal pattern of courtship is bypassed. Mineau and Cooke (1981) take this idea further by suggesting that some female snow geese in fact "welcome some rapes", so that they can increase the genetic diversity of their offspring. To state that some females welcome rape is a contradiction. If the female is not resisting, she is neutral or encouraging; this cannot be rape. As Symons points out:

the primary difficulty in deciding whether a given copulation between members of a nonhuman animal species is 'really' rape is the same difficulty that jurors in rape trials often face: how can consent be determined? (Symons 1979:277).

An even more extreme and ludicrous example of 'rape' has been put forth by Janzen (1977). He suggests that the 'female', seed-producing parts of plants, are raped by the 'male', pollen-producing parts, when the 'males' force pollen into the marginally receptive 'females'.

In addition to anthropomorphizing rape, and altering its definition to suit the data, some researchers avoid defining it at all (Harding 1985). Here, one must read carefully to discover what the author means by rape, because s/he never explicitly outlines a specific definition (see, for example, Manning 1967). In theoretical articles, the author rarely gives a working definition of rape, nor does s/he outline the definitions that are

used in the articles under scrutiny. This usually occurs because the definitions found in the descriptive data are not comparable. It is not unusual for theoretical researchers to assume that a behaviour is 'rape' when it was not called rape in the original article: recall that Shields and Shields (1983) call Keenleyside's intruder male a rapist, when Keenleyside didn't deem this behaviour 'rape' in the original study.

In further attempting to support their position, sociobiologists turn to insects and dabbling ducks. These are considered to provide the best evidence for behaviour that resembles rape, since both involve force by the male and resistance by the female. But, as with the other animal studies, there are problems encountered in this research. Thornhill's 1980 interpretation of scorpionfly mating concludes that, if the male does not provide a nuptial offering to the female, then copulation is, in fact, rape. This is reminiscent of the altered definitions discussed earlier. However, McKinney et al. (1983) stress that, among female dabbling ducks, resistance and escape are normal parts of courtship and copulation. In addition, if the female is raped by a number of males, the aggression is so intense that the female either drowns, or is killed. In this instance, it is hard to see how killing the female would be advantageous to the male and his genes.

Given the questionable, even untenable, nature of the evidence for 'rape' among animals, the central tenet of the sociobiological studies -- the idea that rape really increases male fitness, is even more suspect. Sociobiologists hypothesize that males who rape will leave more offspring than those living under the same conditions who do not rape. However, because it is extraordinarily difficult to test the hypothesis in natural populations, accurate determination of paternity poses serious problems. Under lab conditions, one may be able to discern parenthood, but the lab atmosphere results in different effects on the animal than would be found in the wild. Concerning rape in humans, Harding (1985) calculated that, out of 1,000 attempted sexual assaults, only 1.6 result in a viable pregnancy.

There is no evidence, moreover, that eggs are fertilized as a direct result of rape (Harding 1985). For example, McKinney et al.'s 1983 work on rape in various birds provided no evidence that any of the birds' eggs had been fertilized. Butler (1982) further questions whether male birds are capable of successful mating if the copulation is forced. In addition, most rape attempts among snow geese (Mineau and Cook 1979) and orangutans (MacKinnon 1979) occurred when the female was in a non-fertile period. Other researchers have found that males attempted to mount live male decoys more often than female ones. Neither is an

effective reproduction strategy. Finally, even if some 'rapes' are successful, it still has to be shown that the resulting offspring survive to reproduce, thereby proving that those males who engage in rape will produce more offspring than those who do not. It is evident that the basis of the sociobiological theory of rape is based on data that are inconclusive, at best.

SHIELDS & SHIELDS, THORNHILL & THORNHILL: A CRITIQUE

Aside from the questionable animal data, one can criticize Shields and Shields (1983) and Thornhill and Thornhill (1983) on a number of points. Shields and Shields state that all men are capable of rape (*ibid*), yet do not claim that all men are rapists. Is it not also possible for men who adopt 'honest' or 'deceitful' strategies to rape? In addition, they provide no data that demonstrate an actual increase in men's fitness as a result of raping behaviour; that is, a significant number of viable pregnancies resulting from rape (Sunday 1985).

Like Shields and Shields, Thornhill and Thornhill claim that their hypotheses are testable, yet they provide no data to indicate that rape increases a male's reproductive success. The Thornhills can also be criticized for their restrictive definition of rape, which attempts to understand rape in terms of its ultimate causation. They define rape as only those instances of forced sexual behaviour which might result in the fertilization of eggs and the production of viable offspring for the rapist (Thornhill and Thornhill 1983). This automatically excludes a number of behaviours which are commonly referred to as rape, including homosexual rape, attacks on post-menopausal women, rape of children too young to conceive, incest victims, sexual assaults including sodomy and/or fellatio, and rape murders. Since these behaviours cannot increase a male's inclusive fitness, they are, conveniently, excluded from consideration (Harding 1985), limiting the explanation to only why rape among fertile women occurs, not why rape occurs in both sexes and at all ages, across the spectrum of sexual behaviour.

Both theories argue that men who rape only do so because they cannot mate by more conventional means. In reality, a large percentage of rapists are married -- anywhere from 19 to 43 percent (Thornhill and Thornhill 1983). The Thornhills dismiss this by stating that married rapists do not have what they perceive to be "suitable mates" (*ibid*:164). However, according to recent divorce statistics, there is a large percentage of males who feel that they also do not have 'suitable mates' (Lenington 1985). The Shields fail to mention that rapists are often married. The casual denial

by the Thornhills, and absence of reference by the Shields, indicates a greater commitment to theory than to data (Lenington 1985).

Harding (1985) outlines data purported to represent the level of male fitness attained by rape. Starting with a theoretical number of 1000 attempted rape cases, eliminating all segments of the population that would not be able to successfully reproduce (i.e., those too young or old, those during the infertile period of their cycles, etc.), the author comes up with a figure of 1.6 viable pregnancies out of the 1000 attempted rapes. Harding states that a figure of 0.16 percent rate of pregnancy can hardly be construed as a successful reproductive behaviour for rapists. For fitness to be accurately measured, the surviving offspring would have to attract mates and reproduce.

CONCLUSION

In conclusion, one can see that Wilson's work of 1975 has spawned a great deal of research and theorizing on the subject of rape within sociobiology. More specifically, Shields and Shields (1983) and Thornhill and Thornhill (1983) have extrapolated the research on animal 'rape' and applied it to humans. A critical analysis indicates that, through re-interpretation and re-definition, they have adjusted the data to fit their theories, rather than revise their theories in light of contradictory information.

SCIENCE FICTIONS AND FAIRY TALES: Narratives of Cure and Fulfilment in Homosexuality Research

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ABSTRACT

The interpretive concept of narrative, as outlined in some recent anthropological writings, is applied to 'scientific research' in the journal, *Archives of Sexual Behaviour*, in order to explain why the nature of research into homosexuality in the journal has undergone a radical transformation since 1983.